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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,620

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John Dunagan

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6507

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EXAMINER

MACILWINEN, JOHN MOORE JAIN

ART UNIT

PAPER NUMBER

2442

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/686,620	Applicant(s) DUNAGAN ET AL.	
	Examiner John M. MacIwinen	Art Unit 2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12,25-36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12,25-36 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 06/03/2009 have been fully considered.
2. Applicant begins by arguing, after providing their own summaries of the cited prior art, that, regarding claim 1, "Feigenbaum describes a message that is provided with a hop count that restricts transfers across network boundaries. . . (which) is very different from an intermediate node forwarding a subscription message only to a node identified by the node name as belonging to the first network region". Applicant's arguments are persuasive. However, after further consideration, a new grounds of rejection further in view of McCanne (US 7,133,928 B2) has been made. Said rejection is discussed below in further detail.
3. Applicant next argues that, regarding claim 25, that Speakman does not disclose or suggest a multicast tree where the overlay nodes in the multicast tree disseminate message traffic independent of content". Applicant's arguments are persuasive; however, Applicant's amendments to claim 25 raise issues regarding the Drawings, Specification, and issues under 35 USC 112; elaboration is provided below.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, 'overlay nodes in the second multicast tree disseminating message traffic independent of content' must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter for the reasons given below in the 35 USC 112 written description rejection. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 2442

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 25 – 35 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Said group of claims now require that overlay nodes in the second multicast tree disseminate message traffic independent of content; claimed specifically in independent claim 25 on which claims 26 – 35 and 38 depend.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 5, 11 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe: A large-scale and decentralized application-level multicast infrastructure (Castro et al., published in IEEE Journal 10/2002, but publicly available online 9/2002), hereafter Scribe, in view of Feigenbaum (4,718,005 further in view of Crockett (US 2003/0154243 A1) and McCann (US 7,133,928 B2).

Art Unit: 2442

11. Regarding claims 1 and 36, Scribe shows a method and computer readable medium for providing a scalable multicast infrastructure for multicast messaging on an overlay network including a set of nodes (Introduction and pgs. 101 and 102), wherein each node in the set has a node name, the method comprising: forming a multicast tree formed from a subset of the set of overlay nodes, such that a root node of the multicast tree belongs to a first network region and

disseminating messages through the multicast tree (pgs. 101 and 102, furthermore, it is inherent that said root node must belong to a network region).

Scribe does not show where a path in the multicast tree is prohibited from re-entering the first network region once the path leaves the first network region.

Feigenbaum shows where a path in the multicast tree is prohibited from re-entering the first network region once the path leaves the first network region (Fig. 17, col. 11 lines 14 – 64).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe with that of Feigenbaum in order to ensure that node requests do not result in endless looping, rendering the network unusable (Feigenbaum, col. 11 lines 14 – 64).

Scribe in view of Feigenbaum show utilizing node names, including an IP address for contacting a node whenever possible (Scribe, Section III, A.3, Paragraph 1, and A.2 Paragraph 2)

Scribe in view of Feigenbaum do not show where the IP address corresponds to location information.

Crockett shows where an IP address corresponds to location information ([48, 96-98]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum with that of Crockett as IP addresses are an extremely common way of contacting nodes, and IP addresses inherently disclose information about the nodes which they representing, thus providing a obvious choice for learning more about a node.

Scribe in view of Feigenbaum and Crockett thus show nodes identified by node names as well as where node names indicate the nodes network region (Scribe, Section III, A.3, Paragraph 1, and A.2 Paragraph 2). However, Scribe in view of Feigenbaum and Crockett do not show all of including an intermediate node in a path from a subscriber node to the root node of the multicast tree forwarding a subscription message only to a node identified by the node name as belonging to the first network region.

McCanne shows including an intermediate node in a path from a subscriber node to the root node of the multicast tree forwarding a subscription message only to a node identified by the node name as belonging to the first network region (col. 6 lines 6 – 40, col. 7 line 51 - col. 8 line 3 and col. 19 lines 43 - 68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum and Crockett with that of McCanne in order to better manage the overlay network and better manage network bandwidth (McCanne, col. 2 lines 42 - 61).

Art Unit: 2442

12. Regarding claim 2, Scribe in view of Feigenbaum, Crockett and McCanne further disclose wherein the multicast tree is formed by routing a subscription message from a subscriber node in the first network region to the root node, comprising: receiving the subscription message at a node in the first network region; recording a forwarding pointer to a previous node from which the message was received; and forwarding the message to the root node by routing the message to a next node within the first network region, based on a node name of the next node (Scribe, Section III, A.2 and Figs. 3 – 5; specifically where said subscription message is represented in Scribe by a ‘join’ message, and where said root node is represented in Scribe by a ‘rendez-vous point’, and where said node name is represented by said ‘nodeID’ and ‘nextID’, which can both also be IP addresses).

13. Regarding claim 5, Scribe in view of Feigenbaum, Crockett and McCanne further disclose wherein a network region is one of a geographic locality and an administrative domain (Crockett [48,96-98]).

14. Regarding claim 11, Scribe in view of Feigenbaum and Crockett further disclose wherein an external node belonging to a second organization sends a subscription message to the root node of the multicast tree by determining an internet protocol address of a node in the first organization using a name service and sending the subscription message from the external node to the node belonging to the first organization using a network transport layer underlying the overlay network (Scribe, Section III, A.3).

Art Unit: 2442

15. Claims 3, 4 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett and McCanne as applied to claim 1 above, and further in view of Speakeman et al. (US 6,398,475 B1), hereafter Speakeman.

16. Regarding claim 3, Scribe in view of Feigenbaum, Crockett and McCanne show claim 1, including; forming a plurality of multicast trees (Scribe, Introduction, Paragraph 3) and forwarding the messages to subscribers through the plurality of multicast trees (Scribe, Section III, Paragraph 1).

Scribe in view of Feigenbaum and Crockett do not show creating a topic for which messages are published and publishing messages about the topic to a root node of each of the plurality of multicast trees.

Speakeman shows creating a topic for which messages are published and publishing messages about the topic to a root node of each of the plurality of multicast trees (Abstract, col. 1 line 55 – col. 2 line 45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett and McCanne with that of Speakeman in order to utilize a more efficient multicast tree structure that minimizes duplication of effort (Speakeman, col. 1).

17. Regarding claim 4, Scribe in view of Feigenbaum, Crockett, McCanne and Speakeman further show wherein a subscriber in the first network region finds the topic using a name service comprising a directory of topics published in the first network region (Speakerman, col. 3 line 25 – col. 4 line 24, Abstract).

Art Unit: 2442

18. Regarding claim 12, Scribe in view of Feigenbaum, Crockett, McCanne and Speakeman further disclose maintaining a buffer at each node of each of the plurality of multicast trees to record recent messages (Scribe, pg. 105 col. 1 lines 13 – 16, Feigenbaum, col. 6 line 55 – col. 7 line 7).

19. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett and McCanne as applied to claim 1 above, and further in view of Jonsson (US 2003/0162499 A1).

Scribe in view of Feigenbaum and Crockett show claim 1.

Scribe in view of Feigenbaum, Crockett and McCanne do not show wherein a network region comprises a subset of the set of overlay nodes, and wherein the network region is owned by an organization and each node in the network region also belongs to the organization.

Jonsson shows wherein a network region comprises a subset of the set of overlay nodes (Fig. 1, [101-102,130-132]), and wherein the network region is owned by an organization (Fig. 6, [55,78]) and each node in the network region also belongs to the organization (Fig. 1, [101-102,130-132]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett and McCanne with that of Jonsson in order to enable more routing options, such as via different external networks (Jonsson, Abstract).

20. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson as applied to claim 6 above, and

Art Unit: 2442

further in view of mail.yahoo.co.uk (as shown in the provided Internet Archive page as existing in 1999).

Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson show claim 6.

Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson do not show wherein the node name comprises an organizational indicator indicating ownership by the organization, and an organization-relative indicator that encodes one of a geographic locality and an administrative subdivision within the organization.

mail.yahoo.co.uk shows wherein the node name comprises an organizational indicator indicating ownership by the organization (in this case Yahoo, Inc.), and an organization-relative indicator that encodes one of a geographic locality (in this case, '.co.uk', indicating the United Kingdom) and an administrative subdivision within the organization (in this case, Yahoo, Inc.'s mail subdivision).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson with that of mail.yahoo.co.uk as such types of addresses provide useful descriptions to users and are commonly used identifiers

21. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett and Jonsson as applied to claim 6 above, and further in view of Novaes (US 2003/0012130 A1).

Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson show wherein an external node belonging to a second organization sends a subscription message to the root node of the multicast tree, further comprising: receiving the subscription message

Art Unit: 2442

at a last node in the second organization, recording a forwarding pointer to a previous node from which the message was received at the last node (Scribe, pgs. 101 – 102), and modifying the subscription message (pg. 102, 'forward()' method).

Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson do not show and determining that a next hop in a routing path to the root node is to a node not in the second organization; and modifying the subscription message to request that a node in the first organization forward messages directly to the last node.

Novaes shows determining that a next hop in a routing path to the root node is to a node not in the second organization; and modifying the subscription message to request that a node in the first organization forward messages directly to the last node ([5-9,21-24,28,41-49,69-73]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett, McCanne and Jonsson with that of Novaes in order to utilize a more efficient multicast infrastructure ([45,49]).

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson and Novaes as applied to claim 8 above, and further in view of Speakeman.

Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson and Novaes show claim 8.

Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson and Novaes do not show receiving a confirmation message from the node in the first organization.

Speakeman shows receiving a confirmation message from the node in the first organization (col. 4 line 65 – col. 5 line 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson and Novaes with that of Speakeman in to provide more reliability when transferring messages.

23. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson, Novaes and Speakeman as applied to claim 9 above, and further in view of Burbeck (US 7,143,139 B2).

Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson, Novaes, and Speakeman show claim 9.

Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson, Novaes, and Speakeman do not show wherein, if no confirmation message is received choosing a different node and forwarding the subscription request to the different node.

Burbeck shows wherein, if no confirmation message is received choosing a different node and forwarding the subscription request to the different node (col. 3 lines 26 –39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Scribe in view of Feigenbaum, Crockett, McCanne, Jonsson, Novaes and Speakeman with that of Burbeck in order to utilize all available routes for sending a subscription message to that the odds of the subscription being established is maximized.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. MacIlwinen whose telephone number is (571) 272-9686. The examiner can normally be reached on M-F 7:30AM - 5:00PM EST; off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Application/Control Number: 10/686,620
Art Unit: 2442

Page 14